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# Worldwide Report

TELECOMMUNICATIONS POLICY,  
RESEARCH AND DEVELOPMENT

No. 273

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3 June 1983

WORLDWIDE REPORT  
TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 273

CONTENTS

ASIA

PHILIPPINES

Briefs

Philippines-Indonesia Communications System 1

LATIN AMERICA

ARGENTINA

Inauguration of New Land Station in Bosque Alegre  
(LA PRENSA, 27 Apr 83) ..... 2

NICARAGUA

Radio 'Offensive' Against Country Criticized  
(Xavier Reyes Alba; BARRICADA, 16 May 83) ..... 4

NEAR EAST AND SOUTH ASIA

INTERNATIONAL AFFAIRS

Maghreb Telecommunications Cooperation  
(LE TEMPS, various dates) ..... 6

Telecommunications Committee Meeting  
Strengthening Cooperation

INDIA

Telephone Industry Performance Reviewed, Plans Told  
(THE TIMES OF INDIA, 2 May 83) ..... 8

Communications Minister Opens Electronic Exchange (THE TIMES OF INDIA, 1 May 83) .....	10
Briefs	
Satellite TV Receiver	12
Bangalore Television Center	12
Crossbar Exchange Commissioned	12
ISRAEL	
Israeli Builds Private Satellite Reception Station (Jerusalem Domestic Service, 9 May 83) .....	13
Briefs	
IDF Radio Appointment Controversy	15
SUB-SAHARAN AFRICA	
BOTSWANA	
Government Outlines Telecommunications Plans (Gaborone Domestic Service, 17 May 83) .....	16
GHANA	
'GNA', 'PANA' Reports Telecommunication Projects (PANA, 20 May 83) .....	17
SOUTH AFRICA	
Briefs	
ABS Self-Sufficient	18
Computerized Personnel Appraisals	18
Chronic Shortage of Programmers	18
Computer Purchases Forecast	19
Tswana TV Uncensored	19
New Radar Equipment	19
USSR	
Problems of External TV Broadcasting Discussed (Moscow Radio, 9 Mar 83) .....	20
Satellite Used in Indian TV Broadcasting (SOVETSKAYA ROSSIYA, 12 Mar 83) .....	21
Briefs	
India To Lease Communications Satellite	22

## WEST EUROPE

### EUROPEAN AFFAIRS

Swedish Telecommunications Orders Pay Phones From Denmark (Sanne Stanley; BERLINGSKE TIDENDE, 27 Apr 83) .....	23
---	----

### DENMARK

Phone Company To Offer Cable Television (BERLINGSKE TIDENDE, 26 Apr 83) .....	25
--	----

Briefs Text-Television Being Introduced	26
--	----

### FEDERAL REPUBLIC OF GERMANY

Post Office, Industry Cooperate in Cable Project (Ulrich Schulze; FRANKFURTER ALLGEMEINE, 2 Apr 83) .....	27
--	----

Increasing Use of Data Processing Equipment (Roger Bui; LES ECHOS, 7 Mar 83) .....	30
---	----

### FINLAND

Telecommunications Agency Begins Teletex Trials (HELSINGIN SANOMAT, 18 Apr 83) .....	34
---	----

### FRANCE

Implications of PTT Becoming Part of Industry Ministry (D. Levy; ELECTRONIQUE ACTUALITES, 1 Apr 83) .....	35
--	----

Thomson To Begin Marketing New Switching Technology (D. Levy; ELECTRONIQUE ACTUALITES, 18 Apr 83) .....	37
--	----

Radiocommunications Conference on Satellite Sea Rescue System (ELECTRONIQUE ACTUALITES, 1 Apr 83) .....	39
--	----

### NORWAY

Director of State Broadcasting System on Development Plans (Bjartmar Gjerde; AFTENPOSTEN, 23 Apr 83) .....	40
---	----

Nordic Mobile Telephone System Proves Success (Terje Avner; AFTENPOSTEN, 20 Apr 83) .....	44
--	----

### SWEDEN

Country's First 'Voice Mail Box' Phone System To Start (Margareta Artsman; SVENSKA DAGBLADET, 23 Mar 83) .....	46
---	----

Government Halting Move Toward Local Television Broadcasting  
(Hans O. Alfredsson; SVENSKA DAGBLADET, 15 Apr 83) ..... 49

Briefs

L M Ericsson Plans Expansion 51

## PHILIPPINES

### BRIEFS

PHILIPPINES-INDONESIA COMMUNICATIONS SYSTEM--A modern communications system was inaugurated today, providing direct link between the Philippines and Indonesia. The system, inaugurated by the Bureau of Air Transportation [BAT] and Eastern Telecommunications this morning, is called the Philippines-Indonesia Voice Grade Circuit. The project seeks to improve communications between the BAT and its counterpart in Jakarta on aeronautical matters, including rescue operations. Those present at this morning's rites were the BAT officers, including Director General (Hisusin Sun) and Eastern Telecom Vice President (Jose Rojas). [Text] [OW130501 Quezon City RPN Television Network in English 1100 GMT 5 May 83]

CSO: 5500/4345



# INAUGURATION OF NEW LAND STATION IN BOSQUE ALEGRE

Buenos Aires LA PRENSA in Spanish 27 Apr 83 p 3

[Excerpts] At a press conference held at the International Communications Center [CCI] of the National Communications Enterprise [ENTEL], the general administrator of that state organization, Col Vicente Cerda Rivero, talked about the inauguration of the Bosque Alegre land station in the province of Cordoba.

## The Meeting

The meeting started with the screening of a short film showing different views of the new station and afterwards Col Cerda Rivero gave a talk pointing out, among other things, his satisfaction at the inauguration of a "construction of transcendental importance to communication, which will take care--he said--of our country's needs in the 1980-1990 decade."

Later he said that the studies began back in 1978, when the possibility was considered of installing a new station in addition to Balcarce I and Balcarce II but located in a different place, for geopolitical reasons. After carrying out the proper studies, he continued, the site was chosen in the province of Cordoba.

## The Land Station

The Bosque Alegre land station for international communications via satellite makes it possible, it was pointed out, not only to increase the number of circuits, but also to decentralize the traffic of international calls, because it will permit the processing of communications originating in the northern part of the country and some of those coming from Buenos Aires.

The complex--constructed in the Cordoba region of Alta Gracia, between the Sierras Grandes and the Sierras Chicas in a 50-hectare plot of land donated by the proprietors of the Bosque Alegre cattle ranch--has all the necessary physical, technical and human characteristics, such as the possibility of access to the national communications networks and the availability of specialized personnel.

## Services

It will offer telephone, telegraph and television services, transmission of data and facsimiles of a quality that meets the specifications and recommendations of the board of directors of INTELSAT--of which our country is a member--and of the CCIT [International Telephone and Telegraph Consultative Committee]. The services, for their part, are connected to the national telecommunications network through two different technological hookups: a radio network of 960 telephone lines plus a television channel in the frequency band of 7 GHz, and a coaxial cable of equal capacity; the complex, therefore, also incorporates subsystems of antennas, transmission, reception, multiplexing, television, control and monitoring, energy and a commutation center for service lines.

## More Details

The station will operate 24 hours a day, and among the characteristics of the component systems are: a normalized standard A antenna; transmission in the 5.925 to 6.425 MHz band; reception in 3.700 to 4.200 MHz band; it can withstand temperatures of  $-20^{\circ}$  to  $-50^{\circ}$  C, humidity from 0 to 99 percent, precipitation of up to 100 millimeters per hour and winds of up to 70 kilometers per hour, and under survival conditions, up to 190 kilometers per hour.

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CSO: 5500/2068

RADIO 'OFFENSIVE' AGAINST COUNTRY CRITICIZED

PA171941 Managua BARRICADA in Spanish 16 May 83 p 3

[Article by Xavier Reyes Alba: "Radiophonic Aggression, Another Imperialist Wave"]

[Text] Some 20 long- and shortwave radio stations from Honduras and Costa Rica bombard Nicaraguan territory daily in what is the most large-scale propaganda offensive ever launched at any territory in America except Cuba.

It is a constant violation of our nation's sovereignty, and a vital part of the imperialist aggression that has results comparable to the bullets that they are firing at our patriotic defenders.

We can recall two recent cases: the campaign launched by the U.S. administrations against Cuba almost from the very beginning of the revolution in 1959, and the campaign that, with Falklands Radio as the axis, was launched at the Argentine defenders in the Malvinas.

In both cases, millions of dollars were invested in electronic equipment, as well as for experts in electronic espionage. The CIA has departments that specialize in creating radiobroadcasting networks to fulfill its objectives of broadcasting terrorist messages and misinformation to specific population sectors. Radio Marti and the "Free Europe" are the most brazen examples of how the CIA uses communications as a spearhead for armed aggression.

Nicaragua has been pointing out for the past 3 years the unusual, orchestrated development of radio station power in Tegucigalpa and San Jose. Since then, those countries have not only improved their equipment, but have also increased the number of repeaters (station to raise and amplify the transmission) in the Nicaraguan border area.

This includes the improvement of the HRN [call sign for Voz de Honduras] network (which is made up of that station and 10 others), in which the most reactionary capital and interests of Honduras are involved. In addition, new stations cropped up in southern Honduras, and different programs that seek to "fight communism" and that sing odes to private property and to Honduran democracy began to bombard the Departments of Chinandega, Esteli, Madriz, Jinotega, Nueva Segovia and northern Zelaya.

To the south, Radio Reloj, Radio Columbia and Radio Monumental increased their power, and in unison upheld political positions in line with those of the counterrevolutionary groups that were being born abroad.

In San Carlos, Rio San Juan Department, Channel 2 (Telenac) of San Jose is received more clearly than local stations. This is a channel with few advertisements that is full of the canned programs from which we are gradually becoming liberated.

It is worthy of note that the war and violence programs -- in which the combat patrols of Vic Morrow and Rick Jason are the classical winners -- that exalt the values and ideological concepts of the U.S. "winners" have increased in Costa Rican programming, which contradicts the much-vaunted peace announcements of our neighbor to the south.

With the period of technological improvement completed, the CIA went on to a second phase, which coincided with the launching of large-scale aggression. The listener on the border has no difficulty in noting the coordination that exists between the counterrevolutionaries and their clandestine radio stations and the legal, public radio stations that act as sounding boards for their communiques and reports.

In general, the counterrevolutionary organizations issue their communiques and reports in Tegucigalpa and San Jose. They are immediately distributed to "friendly" radio stations and newsmen who, even before these communiques are reproduced by the counterrevolutionary shortwave radio stations, release them to one newscast or another, with the exclusivity that is characteristic of the capitalistic competition of our neighbors.

The third step in this process is the launching to the world of the same information, after it is retouched and placed in context, by the correspondents of the capitalist agencies.

Nicaragua, which inherited a poor radio infrastructure -- the most backward one in Central America -- and on the basis of it developed a revolutionary programming without the intention of harming our neighbours or exporting our exporting our ideas, has a less powerful radio network than those that our neighbors have organized.

Two radio stations are truly nationwide in scope -- Radio Sandino and La Voz de Nicaragua -- and there are radios in all the departments that have only regional power. There is Radio 13 de Octubre in San Carlos, and Rivas has its radio station with a few kilowatts of power.

Nueva Segovia has Radio Segovia; Jinotega, Radio Pancasan; Chinandega, Radio 19 de Julio; and there is a radio station in La Tronquera for northern Zelaya.

Despite all this, a movement has been started in Costa Rica to establish highly powered radio stations in the border areas because Nicaragua "is using its radio stations to attack the northern areas" of Costa Rica. Honduras has made similar claims and plans to install more repeaters in Choluteca and a radio station in Mokoron.

Moreover, it is no coincidence that the U.S. Government has received the permission of the Suazo Cordova government to install a 100-kilowatt radio station on the Roatan Islands to serve as a Voice of America repeater. All of this seeks to improve the image of the counterrevolutionaries with false reports, and to try to recruit peasants, among other equally impossible objectives.

## INTERNATIONAL AFFAIRS

### MAGHREB TELECOMMUNICATIONS COOPERATION

#### Telecommunications Committee Meeting

Tunis LE TEMPS in French 12 Apr 83 p 4

[Text] Tunis (TAP)--Yesterday, Brahim Khouaja, secretary of state to the Minister of Transport and Communications, responsible for PTT [posts and telecommunications], chaired a meeting of the Maghreb Telecommunications Committee at his departmental office. This meeting will continue for 3 days.

On that occasion, Khouaja emphasized the importance of the subjects to be examined by the committee and noted in this regard that the telecommunications industry is a sector in the process of full expansion which requires the existence of a market capable of absorbing the equipment manufactured.

He recalled that in 1973 the launching of this industry had been envisaged; however, he emphasized that the principal problem was the lack of a market. He said that this market now exists at the Maghreb level, which permits the establishment of an industry that offers assurance of success.

In this regard, he said that demand for telecommunications equipment which is now on the order of 300,000 will reach 4 million in 1990 for common telecommunications lines.

The secretary of state for PTT also emphasized the opportunity to define the nature of the equipment to be manufactured and explained that the world now favors electronic equipment.

He went on to say that the participants in the work of the Maghreb committee are being called upon to define the policy to be followed in this sector and to make a choice between the transfer of technology or its acquisition in seeking ways to sell equipment on the foreign markets.

Underscoring the importance of the work of this meeting, Brahim Khouaja said that the best way to confront the challenges of the future consists in mastering perfected technology and that the development of telecommunications will contribute effectively to the advancement of the great Arab Maghreb. Finally, he said, "It has now become easy to obtain demonstrable results in this sector, thanks to sincere goodwill and coordination of efforts."

## Strengthening Cooperation

Tunis LE TEMPS in French 13 Apr 83 p 2

[Text] On Monday evening, Sadok Ben Jamaa, minister of transport and communications, received Sharif Mohammed, director general of communications and telecommunications of Algeria, and Abdessalem Ahizoun, director of communications of Morocco, with Brahim Khouaja, secretary of state for PTT, also in attendance.

Sadok Ben Jamaa stressed the desire of President Bourguiba and the Tunisian government to strengthen tripartite cooperation in the sector of communications and telecommunications, which will bring the peoples of the Maghreb closer together.

The minister underscored the desirability of developing installations and technology in this sector and intensifying cooperation and exchanges of technical cadres between the three countries.

He also emphasized the need for Tunisia, Algeria and Morocco to adopt a common telecommunications position vis-a-vis the industrialized countries and to contribute to the development of technology in the Arab countries.

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CSO: 5500/4612

## TELEPHONE INDUSTRY PERFORMANCE REVIEWED, PLANS TOLD

Bombay THE TIMES OF INDIA in English 2 May 83 p 4

[Text] Bangalore, May 1 (UNI). The public sector Indian Telephone Industries has achieved an all-time high production performance during 1982-83 with a turnover of Rs. 180 crores as compared to Rs. 157 crores the previous year.

The ITI managing director, Mr K. Swaminathan, told newsmen here today that the company made a pre-tax profit of Rs. 18.5 crores. The various units of the company manufactured 187,000 lines of Strowger equipment, 78,000 lines of crossbar equipment, 580,000 telephone instruments and Rs. 56,40 crores worth of transmission equipment.

He said all the units of the company except the one in Palghat had worked to full capacity. Significant production achievements by way of increased capacity utilisation and manufacture of equipment were reached in Naini unit (telephones and transmission divisions) and Rae Bareli (crossbar and strowger divisions). The Srinagar unit manufactured 63,000 telephones for the first time since its inception. The value of spares supplied to the Post and Telegraphs department was of the order of Rs. 12 crores as against Rs. 10 crores during the previous year.

## Expansion Plans

Sanction had been accorded for a Rs. 180 crore unit to manufacture digital electronic switching equipment for the first time in the country at Manakapur in Gonda district of Uttar Pradesh. Construction work for the unit, which would manufacture 500,000 lines a year, had already started. The first digital electronic exchange was programmed to come out of the factory in 1985.

The company's expansion programmes included the second stage expansion of the Palghat unit, expansion of the Srinagar unit to assemble 100,000 telephones a year and a major new factory at Rae Bareli to manufacture 200,000 lines of crossbar equipment a year. Substantial investments had also been made for the modernisation of the Bangalore unit and for augmenting infrastructure facilities both at Naini and Bangalore.

It had on hand new projects with an investment value of Rs. 328 crores and a turnover of Rs. 900 crores a year.

The company had finalised two collaboration agreements--one for a new generation of multi-access radio systems in Naini and Bangalore and the other for manufacture of low noise amplifiers for satellite communication projects at Bangalore.

Mr Swaminathan said the company supplied special equipment for the Indian national satellite project, the Delhi Asiad and the non-aligned meet. It supplied 102 single channel per carrier models for the domestic satellite communication systems and complete equipment for the earth station at Ernakulam.

Mr Swaminathan said ITI developed the technology for fabricating tantulum nitride resistive film followed by nichrome gold film. These would be used in ground communication equipment by the P and T ground stations during the operation of INSAT-1B. The technology would be extended to other line-of-sight and satellite communication systems being developed.

He said in research and development, a new laboratory for large scale integrated circuits and very large scale integrated circuits had been developed. Twenty-two major projects were either productions or cleared for production.

CSO: 5500/7122



## COMMUNICATIONS MINISTER OPENS ELECTRONIC EXCHANGE

Bombay THE TIMES OF INDIA in English 1 May 83 p 9

[Text] India's first electronic trunk automatic exchange (TAX) came alive when the Union communications minister, Mr V. N. Gadgil, telephoned from here to the Lok Sabha speaker, Mr Balram Jakhar.

"I am speaking from the country's first automatic trunk exchange in Bombay," Mr Gadgil said before the select audience of some 600 who greeted the maturity of the call with thunderous applause.

The new technology would mean quicker maturity of STD calls beginning with "0". There are 64 towns linked to Bombay on the STD with the code beginning "0".

The Prabhadevi exchange will serve the exchanges north of Naigaum and relieve the traffic on the cross-bar 5,000-line trunk exchange on Waudby Road.

The new electronic exchange has a capacity of 8,000 lines and has a computer software package. The Japanese equipment cost Rs. 14.12 crores.

The minister took part in two other developments of Bombay Telephones--the first automatic telex exchange, adjoining the truck exchange, and the inaugural of the 50th local telephone exchange at Mankhurd.

All these developments, Mr P. C. Jauhari, general manager of Bombay Telephones, said were India's contribution to the international year of telecommunications, now being celebrated.

The electronic exchanges enable quicker search for trunk lines, a clearer reception on the telephone, minimum disturbance and higher call reliability. There would be fewer wrong calls.

The inaugural function was arranged in the hall which would house the entire equipment package. The hall had perfect accoustics and every voice addressed into the mike came through clearly, indicating the possibility of similar reception to call processed at the exchange.

Mr Gadgil said that the developments in telecommunications were in line with Pandit Nehru desire to foster a scientific temper in the country. He said

similar automatic electronic exchanges were coming up in other Indian cities this year.

He said in India there were only 3.5 telephones for every 1,000 population, while in the developed countries the figure was 500 and in certain parts of the U.S., it was more than the population.

He wanted telephone subscribers to share their telephones with others so that more people got the benefits of the expansion. He also suggested a more equitable distribution of telephone connections, referring to multiple phone connections in a single house.

Stressing the development of telecommunications, Mr Gadgil said "telephones and wrist watches were the only exceptions among machines which Mahatma Gandhi made".

With the Mankhurd exchange added to the network, the line capacity of Bombay Telephones rose to 397,100, the biggest telephone territory in the country.

The telex exchange, imported from West Germany under IDA credit of Rs. 1.5 crores, had a capacity of 3,000 trunk lines and 800 subscriber lines,

CSO: 5500/7121

## BRIEFS

**SATELLITE TV RECEIVER**--Madras, April 27:--The prototype of a satellite TV receiving system, in the shape of a dish antenna manufactured in the private sector for the first time in India, was unveiled by a well-known Coimbatore firm here yesterday. Estimated to cost around a lakh of rupees at present, the import content of the specialised electronic component works out to a fifth of its cost. A spokesman of the UMS group of companies founded by the late Mr G. D. Naidu, "enfant terrible" of the engineering industry in the south, said, at present, the system could receive three Russian satellites and one Intelstat. More experiments were being conducted to receive more satellite TV programmes. Two of the stations received yesterday were New Delhi Doordarshan and Moscow. The company spokesman said commercial production of the dish antenna would begin in early June. [Text] [Bombay THE TIMES OF INDIA in English 28 Apr 83 p 26]

**BANGALORE TELEVISION CENTER**--Work on the Bangalore TV centre at the seven-acre plot in Jayamahal, began on Friday. The Karnataka Information Minister, Mr M. Raghupathy, Brig Swaminathan and military and other officials attended the "Bhoomipuja". According to Mr Raghupathy, the dispute between the Government and the Army authorities over the site has been settled. The Government has given an alternative 14-acre plot in the Indiranagar area to the Army. Doordarshan officials later told newsmen that the Rs. 5-crore centre would have all modern facilities like those found in Madras and Jullundur TV studios. The TV centre which would become operational within the next 18 months, they said, would have a coverage over a radius of 100 km. [Text] [Madras THE HINDU in English 30 Apr 83 p 9]

**CROSSBAR EXCHANGE COMMISSIONED**--The Calcutta Telephone authorities plan to install a new 10,000 line exchange with code 29 to ease the pressure on the 24 exchange, the oldest auto exchange in the city. Equipment for the crossbar exchange is being imported from Japan. When commissioned 4,000 lines from 24 exchange will be transferred to this exchange, which will also take over 3,000 lines from 43 and 44 exchanges. According to a Press release in Calcutta on Friday, a new 7,000 line crossbar exchange coded 25 was commissioned at Telephone Kendra at Teyetta Bazar in the city during the day. Over 1,100 lines from 22 and 23 exchanges will be transferred to this exchange built at a cost of Rs. 6.69 crores. Subsequently, 7,500 lines from the Burnehazee area, now being served by 21, 22, 23 and 34 exchange will be transferred to this exchange. [Text] [Calcutta THE STATESMAN in English 30 Apr 83 p 9]

## ISRAELI BUILDS PRIVATE SATELLITE RECEPTION STATION

TA091434 Jerusalem Domestic Service in Hebrew 1100 GMT 9 May 83

[Excerpts] And now to something that sounds fantastic. These days it is hard to make surprising technological innovations, especially in the area of communication. For some time, however, there has been a station operating in Herzliyya for receiving satellite broadcasts. It is a small private station, and the man who financed and established it, engineer Tzvi (Golod), receives broadcasts from all over the world via it. Our scientific affairs correspondent Meron Tzur spent a whole day, and apparently an enjoyable day as well, in the receiving station in Herzliyya. Here are his recorded impressions:

[Begin recording] [Tzur] It is the May Day parade in Moscow, thousands of people, many colors, balloons, flags in the central square opposite the Kremlin, the heads of the Soviet Administration against the background of the spring sun, loudspeakers broadcasting slogans. This is the broadcast by Soviet television that is received via satellite in a miniature satellite broadcast receiving station here in Herzliyya. The reception quality of the colors on the television we were watching was excellent. The size of the station is comparable to the inside of an overseas shipping container, 3 by 3 meters. About 20 electronic instruments, a center for satellite reception, control instruments, amplifiers, color televisions--and the broadcast is received well from a distance of thousands of kilometers. The signal travels about 80,000 km to the satellite, and from the satellite to here, the reception station in Herzliyya, via a reception plate only 5 m in diameter. And as a result, we can see very well what is happening in Moscow. Press buttons and we move over to the French-built satellite "Symphony" and receive France broadcasting to West Africa.

A slight turn of the knob and we go to Yugoslavia. Yugoslavia broadcasts to the world through the Soviet Union's satellite system.

And so it is possible to go from one satellite to another and receive well most of the television stations in the world. Next to us, in the satellite reception station here in Herzliyya, is the electronic and computer engineer Tzvi (Golod) who built the reception station over 3 years.

[Golod] The trip [last word in English] is a technological trip [last word in English] to try and receive television broadcasts from all over the world. A very special technological and developmental effort was put into this station.

What I did here is actually a breakthrough in a sophisticated receiver in the aid of (phase la club) circles and sophisticated technology in which I made an adaptation [last word in English] to a U.S. receiver. I changed almost the whole receiver, and we actually planned a new receiver, which is now being checked and packaged [last word in English] in the United States. With the help of this receiver and the help of other equipment it will be possible to build world communication centers....

[Tzur, interrupting] Tzvi, you actually sit here, in front of your television screens, and you, it can be said, are a peeping Tom on the world, on all the world's television stations; is it not so?

[Golod] To a certain extent, yes. I enjoy some nice entertainment programs here and there, but you also have to work and the work is in the building of the equipment, of this receiver, which we apparently will give to an Israeli company to build a production line and supply work for Israeli plants.

[Tzur] A traditional Russian (Kazachok) in great tempo, young male and female dancers in traditional costumes with swords, boots, and fur hats in many colors, a direct broadcast from Moscow's channel two via satellite to Israel. It is only a pity that we do not have a color screen here to show you this as well.  
[End recording]

Mondovisia [as heard] is in Herzliyya. For anybody interested in the price and in the possibility of building such a thing at his home, our correspondent adds that there is still time for that and it will be a few years before every family in Israel will be able to receive the world this way in their living room. And then there will be different problems, such as how to unglue the children from the screen especially on a day like today.

CSO: 5500/4527

## BRIEFS

IDF RADIO APPOINTMENT CONTROVERSY -- A tense atmosphere prevailed yesterday at the IDF radio station with the return of Edna Parr to work as program director at the station. From the day that the military high court had rejected the petition against the appointment of Parr, many workers had appealed to Ron Ben-Yishai, commander of the station, asking that they be allowed to go on leaves without pay. Ben-Yishai did not grant the requests. Yosi Ozrekh, actual director of programming and chief editor of "Two hours from two" submitted his resignation. Yitzhaq Ben-Ner will not submit his program "Right for Now" tomorrow. It is still not clear whether Ben-Ner will continue to direct the program. "We are unable and do not want to challenge the decision of the court. If the IDF wants a ruined station that does not function, it will apparently get that", according to one of the senior workers at the station, who asked to remain anonymous. "At this point, there is no possibility of our acting as an organized body. Each worker will have to decide for himself what he will do. It is absolutely clear that people will leave. It is impossible, otherwise," said the worker. The whole affair of the position to be filled by Parr has aroused great rumblings. The senior administrative officer of the station, Lt Col Tamar Tzur, received a letter from Col Ben-Yishai in which he writes that it is against his will and as an order of the Chief of the Manpower Branch, she must leave the post so that Parr will be able to occupy it. Yesterday, the workers had a long meeting with Ben-Yishai. The workers raised complaints against the military factors and Ben-Yishai tried to persuade the workers from physical actions. Yesterday, the commander of the IDF radio station said that he intends to do everything within his ability so that the station will continue to function and succeed as in the past. Edna Parr refused to respond to events at the station, claiming that she is unable to speak to the press. [Text] [Tel Aviv MA'ARIV in Hebrew 21 Apr 83 p 8] 7075

BOTSWANA

GOVERNMENT OUTLINES TELECOMMUNICATIONS PLANS

MB171433 Gaborone Domestic Service in English 1125 GMT 17 May 83

[Text] The Botswana National Committee for the World Communications Year, 1983, has issued a news release outlining the commitment of the Botswana Government and the Telecommunications Corporation to develop rural telecommunications throughout the country. Among the benefits expected out of such development are greater decentralization of economic activity and improved efficiency of the market signal mechanism, which would benefit most producers and consumers. It will also bring a better access to a variety of services including education, health, police and emergency services.

According to the news release, the Telecommunications Corporation's plans involve the development of the main line system by 1985 and thereafter turn its attention to rural development. It says during the course of the World Communications Year, a feasibility study on the use of domestic satellite communications to resolve rural telecommunications problems is being carried out. However, it said the earliest possible date that such a solution could be technically available is 1988.

CSO: 5500/150

'GNA', 'PANA' REPORTS TELECOMMUNICATION PROJECTS

AB201846 Dakar PANA in English 1745 GMT 20 May 83

[Text] Accra, 20 May (GNA/PANA)--Ghana has concluded a 26 million dollar loan agreement with Japan for the modernisation and expansion of its telecommunications and broadcasting systems.

Under the agreement signed in Tokyo early this month, Accra, the capital will be linked to Kumasi, the second capital, Tamale and Bolgatanga in northern Ghana with a microwave system. Broadcasting studios would also be set up in the northern regional capital of Tamale to enable radio and television programmes to be transmitted to the northern parts of Ghana.

Presently the northern parts of Ghana hardly receive any radio and television programmes beamed from Accra and telephone connections to those areas are almost nonexistent due largely to outdated equipment. Announcing this at a news conference to mark the celebration of the 15th world telecommunications day here, Ghana's Director General of Post and Telecommunications Corporation Peter Debrah said his corporation had already embarked on rehabilitation programmes to improve telecommunications services in the country which have almost broken down due to old age.

Mr Debrah said many African countries including Ghana had been unable to meet telephone demands resulting in telecommunications not being able to play their proper role in the economic growth of those countries. He mentioned limited financial resources, lack of skilled manpower, comprehensive planning and national development policies on the development of communications infrastructure as some of the drawbacks to the serious information gap in many African countries.

Mr Debrah therefore appealed to African governments to give priority attention to the development of their telecommunications infrastructure since communications constitute a key element in national development and ensure cooperation and successful action for solving pressing and pervasive world problems.

Ghana is marking the week-long celebration with the repair and maintenance of all faulty telecommunications equipment in the country.

CSO: 5500/154



## SOUTH AFRICA

### BRIEFS

**ABS SELF-SUFFICIENT**--Automated Business Systems (ABS) of Johannesburg, the local arm of the Australia-based Hartley computer group, which has been self-sufficient for a number of years, have installed 280 Hartley systems for chartered accountants in practice--known as Hapas--and 330 computers. About 20 Hartley 3 900 computers are used with Hapas in South Africa. Increased muscle for the parent Hartley group was provided by funding from leading insurance companies in New Zealand. This led to the restructuring of the group last December. Mr David Hartley, head of Hartley Computer Development, one of two companies in the group, who recently visited South Africa, said that since regrouping the company had exceeded quotas for two consecutive months. [Text] [Pretoria SOUTH AFRICAN DIGEST in English 15 Apr 83 pp 6-7]

**COMPUTERIZED PERSONNEL APPRAISALS**--For the past eight months Plascon, the paint company, has been using a computerised personnel-performance-appraisal system developed in Israel. Considered unique in this country, the system has proved highly satisfactory to the company, which has 4 000 employees. The system does not pretend to replace the human appraiser but provides him with valuable help where it is most needed. "The two major problems associated with conventional performance appraisal are, first, that it tends to be very subjective and, secondly, much of the information about employees such as qualifications, experience and special areas of expertise is seldom referred to or made use of," said a spokesman for Computerised Personnel Systems (CPL), the company marketing the system--called Mentor--in South Africa. CPL is jointly owned by Systems Programming, a large software house based in Sandton, and the Pilat group of Israel, which developed the system. The system irones out the personal biases of individual appraisers by use of statistical techniques and also brings all available information about employees into play. Seventy application modules are available, each catering to different forms of appraisal. The system, which is customised for specific companies, has a cost effective spin-off: Efficient allocation of the increment budget, ensuring that the right people are rewarded and thereby encouraged. Correct identification of good and bad workers, leading to remedial action and resultant efficiency. [Text] [Johannesburg SUNDAY TIMES-BUSINESS TIMES in English 1 May 83 p 5]

**CHRONIC SHORTAGE OF PROGRAMMERS**--Unless immediate steps are taken to alleviate the chronic shortage of computer programmers in South Africa, key industries

will be adversely affected. This warning has come from Eric de Villiers, national manager of the Control Data Education Resources Centre of the Control Data Institute, one of the few organisations providing training for programmers. "There is currently a shortage of 2 000 programmers. With the computer market growing at the rate of 40% a year, this shortfall will inevitably become more critical." "Industry must assess its own requirements for programmers and other support personnel with a view to establishing formal training programmes, possibly in co-operation with computer colleges, otherwise the shortage will become more acute." [Text] [Johannesburg SUNDAY TIMES-BUSINESS TIMES in English 1 May 83 p 5]

COMPUTER PURCHASES FORECAST--South Africans will buy more than R10-million worth of computers every day four years from now, according to estimates worked out by DataQwip, a privately-owned computer finance house. This year, Harry Haralambous, the company's marketing manager, says South Africans will buy computers worth an estimated R1 009-million, or R2,76-million worth a day, without software. Next year total sales will rise to an estimated R1 392,4-million, to R1 921,5-million in 1985, to R2 651,8-million in 1986 and to R3 659,4-million in 1987. The figures the company has worked out for "gross market", meaning all computer, electronic office and communicator sales, but excluding software, is an estimated R1 086,75-million for this year, R1 494,4-million for 1984, R2 055,9-million for 1985, R2 829,4-million for 1986 and R3 895-million for 1987. Mr Haralambous says he believes banks will pouch a 68% share of all computer financing this year, 75% next year, 78% in 1985, 83% in 1986 and 85% in 1987. If this projection is correct, it will mean, as he claims, that after the seven percent jump between this year and next, banks' share of the market will increase only marginally in percentage terms, but substantially in money terms. He says Dataqwp's aim is to finance R29,5-million worth of computer acquisitions this year and see it more than double its turnover every year between now and 1986--moving to R61,6-million next year, R121,8-million in 1985, R249,8-million in 1986--and start slowing down in 1987 when the increase will be a relatively modest 90% or R225,6-million to bring the year's total to R475,4-million. [Text] [Johannesburg SUNDAY TIMES-BUSINESS TIMES in English 24 Apr 83 p 5]

TSWANA TV UNCENSORED--Mafikeng--Bophuthatswana's television service will not be bound by South African censorship laws and programmes of a political nature will not be censored by South Africa, the chairman of the Bophuthatswana Cabinet committee on radio and television, Mr Amos Mmutle Kgomongwe, said yesterday. Mr Kgomongwe, who is also Minister of Public Works and Water Affairs, was reacting to news reports hinting at South African censorship. He said such measures would detract from Bophuthatswana's independence and denied the reports. [Text] [Johannesburg THE CITIZEN in English 4 May 83 p 3]

NEW RADAR EQUIPMENT--LONDON--The British firm, Marconi is to sell radar equipment worth R8 500 000 to South Africa for military purposes, the Observer of London reported yesterday. The Department of Trade has confirmed that it has granted an export licence for the equipment, which updates the S247 surveillance system which Marconi supplied in the 1960's. The anti-apartheid movement has announced that it will protest that the deal breaches the UN arms embargo. A spokesman for the SADF said last night it was SADF policy not to comment in any way whatsoever on allegations about the sale or aquisition of weapons or weapon systems. [Text] [Johannesburg RAND DAILY MAIL in English 25 Apr 83 p 1]

## PROBLEMS OF EXTERNAL TV BROADCASTING DISCUSSED

LD100043 Moscow in English to Great Britain and Ireland 2000 GMT 9 Mar 83

[From the "Science and Engineering" program, with Boris Belitskiy]

[Excerpts] Here is a question from (Jean Eaglestone) in Bournemouth who wants to know whether there have been any developments lately in satellite communications that would enable British viewers to tune in directly to Soviet television programs.

[Belitskiy] No, I'm afraid I have to disappoint our Bournemouth listener. The problem of direct TV broadcasting to other countries is a very complicated one. By this I don't mean technical difficulties. These can easily be overcome. In fact, the Soviet Union has, since 1976, been launching satellites of the Ekran series which are actually satellites capable of direct TV broadcasting to people's homes. There are, however, no plans to use these satellites for direct TV broadcasting to countries like Britain. The reasons for this are not technical but political and legal. Undoubtedly, direct TV broadcasting has a big potential for bringing nations closer together, for enabling them to get to know one another better; but there is also the danger that this powerful new instrument would be misused. Public opinion is, in our day, having an ever greater influence on world affairs. In view of this, great efforts are being made by states to shape public opinion on a worldwide scale, and the mass media — especially TV — are being used for this purpose with increasing sophistication.

You know how often the misuse of the media has been the cause of friction between countries. Considerable damage is also being done by the one-way flow of information from some technically more advanced countries to developing nations. Furthermore, the existence of privately owned mass media in some countries such as the United States and Britain poses the additional danger that they could be used to cause economic damage to other countries if allowed to operate internationally in an uncontrolled fashion. For all these reasons the Soviet Union has proposed that direct TV broadcasting to foreign countries should be subject to a special international convention.

CSO: 5500/1016

SATELLITE USED IN INDIAN TV BROADCASTING

PM141301 Moscow SOVETSKAYA ROSSIYA in Russian 12 Mar 83 First Edition p 1

[TASS report: "Via a Soviet Satellite"]

[Text] "Delhi. The USSR Ministry of Communications has started transmitting test signals for India's national television network via the Statsionar-3 satellite relay station.... Please confirm. Wishes for successful work!"

"Moscow. Space communications center at USSR Ministry of Communications. Thanks for excellent job!"

These cables mark the beginning of the functioning of a television relay station set up on a Soviet communication satellite in the interests of friendly India's television, so a TASS correspondent was informed at the USSR Ministry of Communications.

An agreement on this was signed following Indian Prime Minister Indira Gandhi's visit to our country last fall. It envisaged that the Indian side would lease the television relay station on a Soviet Raduga-series satellite carrying the international identification Statsionar-3. And now preparatory work is over and the system is functioning successfully.

The Statsionar-3 Soviet communication satellite is in geostationary orbit--traveling at the same speed as the earth. A transmitter antenna located near Delhi sends a television signal to its relay station which is then transmitted to all receiving stations in the republic. This makes it possible to receive direct transmissions from Delhi television in the remotest corners of India.

The commissioning of this space television system is yet another vivid example of the strengthening cooperation between the Soviet Union and India and of the use of near-earth space for peaceful purposes.

CSO: 5500/1015

USSR

BRIEFS

INDIA TO LEASE COMMUNICATIONS SATELLITE--Delhi--The Ministry of Information and Broadcasting of India has officially announced that it will cease using the American communications satellite Intelsat-5 for relaying television transmission via space. At one time India was forced to lease this satellite after the satellite Insat-1A built earlier in the United States to meet an Indian order suddenly ceased to operate. It had a large number of defects. Now, the Ministry of Information and Broadcasting of India has decided to lease a Soviet communications satellite. By the end of this week, millions of Indian viewers will be able to see programs relayed via a Soviet satellite. Representatives of Indian television have stated that the quality of the signals broadcast by this Soviet satellite of ours is entirely to their satisfaction. [Text] [LD292117 Moscow Domestic Television Service in Russian 1545 GMT 29 Mar 83]

CSO: 5500/1018

SWEDISH TELECOMMUNICATIONS ORDERS PAY PHONES FROM DENMARK

Copenhagen BERLINGSKE TIDENDE in Danish 27 Apr 83 Sect III p 1

[by Sanne Stanley]

[Text] GNT Automatic, Inc., in Soborg has just signed a huge contract for coin telephones with Swedish Telecommunications. The contract is the biggest GNT has ever had. The firm will supply 130 million kroner worth of pay telephones to the Swedes in the course of 1984 and 85.

The contract, involving 16,000 pay telephones in all, involves as many additional manufactured telephones for each of the years 1984 and 1985 as were produced altogether in 1983. The firm is negotiating at the moment with a series of other countries concerning exportation of the same telephone type.

"Swedish Telecommunications has an incredibly conscientious administration," said GNT director Per Baatrup. "This contract, then, is a fantastic recommendation for us to telephone companies all over the world."

The new contract had its origin in a call for bids which GNT won in competition with nine other countries in 1981. At that time, the firm got a contract for 1,000 pay telephones, which are to be ready in the fall.

"The fact that we got the big contract is due first and foremost to two things," said Per Baatrup. "Firstly, the Swedes have been very satisfied with the pay telephones that we have sold them since 1978, pay telephones for restricted use, for restaurants, beauty parlors, and the like. Secondly, we are the most flexible when it comes to meeting the customer's requirements."

The new contract covers 8,000 coin telephones and 8,000 other telephones for public use. The special characteristic of both types is that the coin telephones can take four different kinds of coins.

Partnership

The contract will perhaps come to mean that GNT in the future will open up its own production partnership with Swedish Telecommunications. "It depends on whether the Swedes will be needing more telephones," said the man behind the huge contract, Department Chief Flemming Brandt. "But it's certain that they will be. There are 40,000 pay telephones in Sweden which need to be replaced."

"The Swedish contract came at just the right time," said director Per Baatrup. "Our net result for 1982 won't be quite as good as it was in 1981, when we had a surplus of some 18 million kroner. But with this contract we'll be making progress again into 1984-85," he said.

#### New Staff Hired

The firm has already hired 20 new staff members to manufacture new telephones for KTAS. The Swedish contract will ensure 50 temporary positions in the next couple of years. "But if we get more wind in our sails, we'll be able to hire even more," Per Baatrup said.

Since the mid-sixties GNT has exported approximately 135,000 pay telephones throughout the world. Besides to Sweden, telephones have been supplied to countries such as Norway, Finland, Ireland, Saudi Arabia, Guatemala and Costa Rica.

The firm, which anticipates a 350-million-kroner turnover for 1983, exports in the amount of approximately 200 million kroner annually. GNT has daughter companies in Germany, England, France and the U.S. There are some 900 employees in Denmark alone.

9584

CSO: 5500/2685

PHONE COMPANY TO OFFER CABLE TELEVISION

Copenhagen BERLINGSKE TIDENDE in Danish 26 Apr 83 p 7

[Text] When the many projected communications satellites are sent up in the mid-80's, KTAS will be ready to transmit their broadcasts to consumers. KTAS will be able to do this much more cheaply than has been previously announced. This was stated by the chairman of KTAS, Mogens Camre, MP, in a KTAS general meeting yesterday.

Mogens Camre pointed out that a large company in the antenna field has stated that the necessary investments, according to a country-wide plan, would amount to 30 billion kroner. According to KTAS' calculations, the establishment of a similar network covering dwellings located in cities or in city-like settlements, but not in the rural districts, would come to only 4 billion kroner.

To get this network of home service, even if every home does not subscribe, costs will be manageable for most families and will be actually less than what is currently being paid annually for color TV reception licenses, Camre said. KTAS is already negotiating with twenty local community administrations concerning the establishment of cable TV. These negotiations are expected to be concluded this year.

Even though new technology is making inroads, and efforts are being made for maximum efficiency, increases in rates will also occur. It has not been specified how big the increases will be, however, they will be lower than the inflation rate, the report says. Mogens Camre reported finally that the public directory, which used to be included in the telephone books, will be included again because so many complaints were received when it was left out of the 1982-83 telephone books.

9584

CSO: 5500/2685



DENMARK

BRIEFS

TEXT-TELEVISION BEING INTRODUCED--Danish Radio will include permanent text-TV programming beginning 16 May, chiefly for the benefit of the nation's approximately 300,000 hearing-impaired citizens. The system, which has been in effect on television on a trial basis for three or four years, will be used in some 60 programs, including news, public service announcements, etc., which are updated and kept current every weekday, office manager Finn Rowold of Danish Radio announced Thursday at a seminar on information technology in Copenhagen [Text] [Copenhagen BERLINGSKE TIDENDE in Danish 8 Apr 83 p 2] 9584

CSO: 5500/2685

FEDERAL REPUBLIC OF GERMANY

POST OFFICE, INDUSTRY COOPERATE IN CABLE PROJECT

Frankfurt/Main FRANKFURTER ALLGEMEINE in German 2 Apr 83 p 3

[Article by Ulrich Schulze]

[Text] Frankfurt/Main, 1 Apr--In the future the Deutsche Bundespost (Post Office Department of the Federal Republic of Germany) will be stepping up its cooperation with industry in laying wide-band cables for expanded and interference-free reception of TV and radio programs and for new information services as well. At a special meeting on Thursday the administrative council of the post office department raised no objections to such an action. This cooperative effort is a response to requests for better reception and more programs, with a further goal being the creation of new jobs within the post office and private industry as a result of an accelerated laying of cable.

The contracts for the cable projects will be placed starting immediately. The so-called copper coaxial cable already used previously for cable distributor systems will be laid. The Deutsche Bundespost does not wish to wait for the development of glass fiber technology. It is not as yet possible to transmit an adequate number of programs and additional services via glass fiber cable. Apart from this, the rapid laying of cable offers the advantage of feeding future satellite programs into cable distributor systems and transmitting them to the receiver in this manner, says the Postal Ministry.

The post office's intended form of cooperation includes a series of various tests over a period of 2 years, however the contracts run for a longer period of time. Sources indicate that the administrative council will not reach a decision on the ultimate method of cooperation until 1985. In the opinion of postal minister Schwarz-Schilling, no decree need be issued by the administrative council with regard to the tests that are just beginning. Consequently, on Thursday the postal minister merely provided them with information about the project.

Two different contractual forms of cooperation form the basis of the cooperative effort. According to these, private business will establish wide-band distributor systems in a specific "expansion area" and maintain them in a ready-to-operate condition under contract from and per technical specifications of the post office. The distributor network thus created will be controlled by the Deutsche Bundespost. The companies, says the ministry, will be "entrusted

with a job for the government." The second intended form of cooperation includes the transfer to the companies of "certain telecommunication work in the area of radio distribution when establishing and operating wide-band distributor networks." Involved here is not only the establishment of "relatively large closed-circuit wide-band distributor networks" (not including radio receiving station) but also "offering some or all of the services possible via these networks"; this includes the "marketing of the network."

The Postal Ministry points out that the transfer of such duties is completely in accord with the law on telecommunication systems. The formulation of the "law is quite broad," states Schwarz-Schilling, adding that no updating of the law on telecommunications will be necessary and that a revision would not be practical because this would involve an excessive expenditure of time. A revision, the minister notes with a reference to the manufacture of receiving equipment, could have repercussions on the economy as well. In the postal minister's opinion, the intended forms of cooperation are in conformance with the constitution and the legal code. A "thorough examination of the laws" did not turn up any objections, he notes. Hesselbach, the chairman of the administrative council for the Deutsche Bundespost, shares this opinion. He recognizes a "defensible legal position" which "makes possible such action" on the part of the minister even though "arguments" in the expert opinions "are not convincing in all details." In addition, Hesselbach recommends that a position statement also be obtained from the Ministry of Justice and from an expert in constitutional law.

Schwarz-Schilling indicates that the laying of the cable will proceed within the scope requested by the states. Since receiving inquiries from the Postal Ministry in November the states have allegedly developed their views on this matter. The ministry notes that of the billion marks set aside by the Bundespost for the coming year 750 million marks have already been allocated. The lack of time allegedly precludes the possibility of only the Deutsche Bundespost laying the cable on its own. Cooperation with industry is said to be practical and in accordance with the theories of market economy. The monopoly enjoyed by the Deutsche Bundespost had been criticized only a short time before, it was noted.

Allegedly, a further goal of the cooperation with private businessmen is the sharing with private enterprise "the not inconsiderable financial risk involved in these actions, which are necessary for the economy and for technological development." In the opinion of the Deutsche Bundespost, activity and creativity of the partners could be practically complemented by means of cooperation. This view of the minister led to vigorous disagreement with the union of postal employees following the last meeting of the administrative council of the Deutsche Bundespost. Van Haaren, the leader of the union, had expressed the fear that cooperation with industry would lead to a reduction of jobs within the post office. In his position statement he declares, "Anyone who wants wide-band cables for entire cities and population centers to be laid by private companies with the Deutsche Bundespost playing only a minority role in these proceedings is setting the groundwork for the sellout of the telecommunication system." He further states, "If the minister of the Deutsche Bundespost asserts that cooperation with companies, craft and industrial

associations is intended as a trial arrangement, he also must ask himself how and if such cooperation can be retracted in the interest of the Deutsche Bundespost." Van Haaren called upon Schwarz-Schilling to end his "secret diplomacy" with private companies in the interest of "the more than 500,000 employees of the Deutsche Bundespost."

Schwarz-Schilling, intervening in the internal dispute that has broken out in this connection within the Postal Ministry, rejected Van Haaren's position. He notes that he informed the union of postal employees of his plans in detail on 15 March, 6 days prior to the meeting of the administrative council of the Deutsche Bundespost, and that Van Haaren expressly thanked him for the information on 21 March. That there could be no suggestion of "secret diplomacy" is proven, he asserts, by the flood of postcards which had been distributed by the union of postal employees and which had been arriving at the ministry by the basketful for days, all bearing the signatures of the senders under the preprinted text: "Most honored minister, I herewith protest against your intention to involve private parties in the establishment and operation of telecommunication systems."

12293

CSO: 5500/2659

INCREASING USE OF DATA PROCESSING EQUIPMENT

Paris LES ECHOS in French 7 Mar 83 pp 11-12

[Article by Roger Bui: "Germany Is Rapidly Computerizing to Revive All Its Economic Structures"]

[Text] At the beginning of 1982, Germany's installed computers amounted to 15.6 billion dollars, except for microcomputers and office automation. This figure quite simply makes it the third largest in the world, behind the United States and Japan, and the first in Europe, ahead of France and England. It is also a market that is growing more than 20 percent per year.

Computerization is a large basket into which everyone pitches in whatever he can think of, sometimes using very fanciful definitions. That is why we have relied on the IDC classification, which is generally well accepted by professionals throughout the world.

In order of computer power, this classification includes universal computers (mainframe or general purpose computers), minicomputers, small management systems, and microcomputers. Added to these are text processing systems, computers dedicated to a given function, and of course, computer software and services.

In the universal computer group (value greater than 250,000 deutsche mark), IBM is faced with the "Bunch" manufacturers, namely the Americans which are offering an alternative that is non-compatible with Number One (Bunch is a word created from the initials of Burroughs, Univac, NCR, CDC, and Honeywell), with national manufacturers such as Siemens, and to a lesser extent, with Nixdorf, BASF, and European manufacturers such as CII-HB and ICL.

Contrary to the purist policy practiced by our national manufacturer CII-HB, which is to continue to remain incompatible with IBM, our neighbors accross the Rhine are demonstrating a commercial pragmatism that is not tainted by a hypocritic technical nationalism.

## Largest European Number of Minicomputers

Siemens and BASF have thus engaged the battle with IBM, using Japanese weapons sharpened by Fujitsu and Hitachi, respectively. Nixdorf is not staying behind, manufacturing a compatible machine under Israeli license, and further supported by its own developments. That is what is known as a PCM (plug-compatible manufacturer) activity.

In terms of value, this market represents about two-thirds of the global computer market, but with a lesser growth than that of other, more innovative areas.

Beyond these, minicomputers, the offspring of real time industrial computers, were the great hope of the 1970's. It seemed at the time that such manufacturers as Digital, Data General, Siemens, Philips, Telemecanique, CII (currently SEMS), or Intertechnique would invade all areas of economic activity with their extraordinary minicomputers. But the history of computers is a fast moving one, and minis have failed where microcomputers are succeeding beyond all hope, for two fundamental reasons: lack of management software and price.

To escape the micro tidal wave, minis have grown into mid-minis or super-minis, and have gnawed away at installations that should have been equipped with universal computers. This phenomenon is prevalent throughout the world.

## Text Processing As Well

Germany has the largest mini inventory in Europe, but is the second largest annual market after France. However, its growth rate is slightly higher than France's, leading various analysts to say that Germany's annual market will overcome that of France by 1985. It is notable that French minicomputers are represented in Germany by the Mini-6, along with a few Mitra and Solar.

The category of small management systems is the most difficult to define because it is based on a utilization concept, without taking into account the origin of the computer that supports it. These are small computers used for management, which theoretically do not require specific installations (air conditioning and so on).

They are based on universal computers (IBM 32/34, Sperry S80), minicomputers (Digital DS, Data General DS, Kienzle, Nixdorf, TA, Logabax, and so on), and microcomputers (large Micral, CTM, David).

The prices of these machines falls between 100,000 and 1 million francs. They are used to produce management reports, and thus are considered as production machines, as compared to development and personal computers.

FRG is the European leader in this slot, ahead of Italy, France, and Great-Britain. It is by far the largest European group with 64,769 installed units, in front of Italy with 37,895 units, France with 28,948 units, and England with 19,710 units.

This is because the machines that were called office computers had a great deal of success with German PME and PMI (small and medium-size enterprises and industries). Companies like Nixdorf, Kienzle, Logabax, Triumph Adler, Philips, and Olivetti also made their large contributions.

Created by R2E with the first Micral in 1973, microcomputers today play a major role in any computer development strategy. To overlook them would amount to frivolity in the face of this tidal wave. Does IBM not plan to achieve 50 percent of its global turnover with microcomputers by the next decade?

This fully expanding market is disappointing everyone. In fact, we observe two inverse movements which can very readily be explained. On one hand, all the manufacturers announce the most whimsical delivery figures (objectives).

On the other hand, analysts are very conservative, and tend to stand on figures lower than those actually achieved. However, everyone agrees that according to IDC, the market is growing very rapidly at about 55 percent per year in Europe as well as in the United States.

In Eastern Europe, Germany is leading with more than 33 percent of the 1981 deliveries, ahead of England with 23.6 percent, France with 14.5 percent, and Italy with 7.3 percent. These figures, whose source is the electronic consultant R2E, are based on a European total of 220,000 units delivered in 1981. IDC also notes that France and England will advance more rapidly, but will still not catch up with Germany in 1986.

The text processing market is in a somewhat special position compared with the computer market in general. Only three years ago, there were those who were sure that office automation would swamp everything. They were wrong once more, because the market of the century is not that of office automation, but that of a product, the microcomputer.

Germany is still the European leader with 14,200 single station and 1130 multi-station machines delivered in 1981, against 3800 and 680 in France.

England is in second position, ahead of France. The progress of these machines, dedicated to a single function, is not very great: 27,700 single station and 2200 multi-station machines in 1986, in Germany once more.

Installed Inventory: 1.3 Times the Gross National Product

"Who can do the most, can do the least." Actually, the market of dedicated machines is strongly threatened by the new micros, which offer all the functions of text processing in a multi-function environment, at a definitely lower price.

Lastly, in order to complete this extensive German computer picture, let us not forget software and computer services, which in 1981 represented some 2.8 billion deutsche'mark.

More than one-third of this figure corresponds to processing, most of which is still batch processing, and a little less than one-fourth for software. The remainder is distributed between consulting, creation, and turnkey systems.

Comparing the value of installed universal computers to the gross national product, Germany lags at 1.3 against 1.5 for France. This may be an imperfect indicator of computer penetration, but its virtue is that it exists.

In fact, the German market reflects the federal organization of the country. It has very many small units which correspond to an effective work decentralization. The large central units in France are the result of a concentration of economic activities in Paris. It is only the German "rigorousness" that has succeeded in channeling the computerization of PME in that country.

11,023

CSO: 5500/2657



## TELECOMMUNICATIONS AGENCY BEGINS TELETEx TRIALS

Helsinki HELSINGIN SANOMAT in Finnish 18 Apr 83 p 23

[Text] The telecommunications agency will, already within this year, start using so called teletex service, which is, at present, the most advanced form of electric postal transmittal. By means of it a one page letter can be sent to the addressee within a few seconds.

On Thursday CEO Pekka Tarjanne opened the interfacing system between telex and teletex in Helsinki. The teletex system will be experimented till the end of this year, after which the actual teletex service will begin.

The teletex service is designed for the needs of top-level business correspondence. The service will be carried out in the general data network where there is an interface to the telex network for the teletex. In the future the activities will also cover, among other things, partial transmittal of pictures, so that also the signatures in the letters can be transmitted by means of teletex.

The telecommunications agency believes in teletex especially as the office automation systems become more popular. The teletex service and its equipment combines preparation of business letters and other documents, correspondence and filing. The telecommunications agency estimates that within a couple of years the possibility of using the teletex service is an absolute requirement within the new office automation systems.

The recently opened interface enables the Finnish teletex experimenters to communicate not only with each other, but also with the more than 7000 telex machines in the country. The communication with the other countries' approximately 1.3 million telex machines will be somewhat limited during the next few months.

The telecommunications agency believes that within three years, there will be direct connections to all economically important countries. As early as this spring the agency is trying to open teletex connections to Sweden and West Germany.

12190

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# IMPLICATIONS OF PTT BECOMING PART OF INDUSTRY MINISTRY

Paris ELECTRONIQUE ACTUALITES in French 1 Apr 83 pp 1, 6

[Article by D. Levy]

[Text] The transfer of PTT to the Ministry of Industry and Research (MIR), decided during the recent reorganization of the government, raises more questions than it answers concerning the new political orientation expected for telecommunications. Once the moment of bitterness has passed--with Mr Mexandeau having retained his PTT credentials after all, but having dropped one grade to the level of deputy minister--the only question is to know whether through his decisions, the MIR minister will support and even expand PTT's choices, or whether on the contrary, he will attempt to fight them.

All change creates uncertainty, and the change affecting PTT does not break the rule. However, while the government's decision to attach PTT to MIR has created a precarious feeling as well as individual concern for several days (if only because the number of technical advisors for a deputy minister is smaller than the number for a full minister), it was noted that the agency was entirely spared in this respect.

Another observation is that in the government's hierarchical order, PTT had gained several steps with respect to previous governments in which the agency traditionally vegetated in the penultimate position. This is not trivial for the PTT's image and for ministerial arbitrations, even if some people believe that this "promotion" has been given to help swallow the pill.

This having been said, the transfer of PTT to MIR is especially meant to wipe out any industrial policy divergence between the two ministries, to avoid a dispersion of research efforts--the transfer had already been broached through agreements with CNET (National Center for Telecommunications Studies), LETI (Laboratory for Computer Electronics and Technology--at the Grenoble Center for Nuclear Studies), and CNRS (National Scientific Research Center) for instance--and to provide MIR with the money it has always lacked for policy implementation.

On this latter point, the MIR will undoubtedly not fail to collect several billion francs from the surplus created by Telecommunications (we might remember that this had already been done with the 1982 and 1983 PTT budgets, from which 3.2 and 2 billion francs respectively, had been disbursed to the general budget). At the same time, the practically unlimited borrowing capability of Telecommunications offers easy access to the financial market, notably through the National Telecommunications Fund. And lastly, it is not out of the question, given the desired affinity between savings and industry, to use the National Savings Fund managed by PTT, to form a sort of short circuit for financing (within several percentage points of deposits), industrial programs (such as those emerging from the electronics industry).

The policies of PTT and MIR had become especially opposed to each other after the nationalization of CGCT (General Company for Telephone Construction), with PTT advocating a merger of this company with Thomson in order to balance the two industrial switching manufacturers, and MIR supporting a merger with CGE in order to form a single manufacturer which had already been named Telephone de France.

#### A Solution for CGCT

This split had caused the cabinet of the Prime Minister to intervene last week, indicating in a letter to CGCT personnel that the enterprise will not merge with another group and that it will not be dismantled. By the same token, Mr Lestrade, chief executive of CGCT, will have to negotiate industrial agreements with various companies, that can range from simple sub-contracting to the formation of a joint company (with Thomson for instance).

But there is no question for CGCT to form a third manufacturer. It is therefore a matter of using the company's dynamism to begin a reconversion and diversification process aimed at insertion within a group. The need for this is increased by the group's possible access to international technology and networks.

The fact that Mr Mexandeau is closer to Mr Fabius than he was to his predecessor should finally encourage the emergence of a "sweeter" solution for CGCT.

11,023

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THOMSON TO BEGIN MARKETING NEW SWITCHING TECHNOLOGY

Paris ELECTRONIQUE ACTUALITES in French 18 Apr 83 pp 1, 18

[Article by D. Levy: "A Network Strategy Resting on Key Products"]

[Text] The adoption by PTT of the two first mass produced MT-20 automatic switches is the major event of the beginning of this year for Thomson-CSF. This fundamental stage goes hand in hand with a completed industrial reorganization: "Our plants are now completely adapted to the production of time-switching exchanges; the equipment is produced at a steady rate of 120 units per week," we were told by Mr Darmon, director of Thomson-CSF's communications branch, during an interview.

At the technical and industrial level, Thomson thus feels ready to capitalize its time switching know-how on the international market, through an extensive network strategy relying on key products. And should two industrial manufacturers be retained, Thomson claims strict equality of treatment with their competitor in terms of studies and public orders. If these problems--to which Mr Darmon adds "the burden of the past, which must be lifted"--are solved, then nothing stands in the way of the development of Thomson's switching activities.

"With a turnover in its communications branch that has gone from 10 to more than 15 billion francs in two years, and exportations that have tripled during the same period, Thomson is becoming as of this year, one of the major companies in telecommunications," explains Mr Darmon. It should be noted that this 15 billion activity represents a position that is one-half as large as that of CIT-Alcatel, 30 percent larger than L. M. Ericsson, and larger even than that of NEC-Telecommunications. "In other words, we find ourselves in the same class as GTE, Northern Telecom, and several others, and just behind ATT and ITT. This position and our role on the international market are acknowledged by all, and notably in the United States, as demonstrated by the French videographic action organized around Thomson on the American market."

However, having analyzed its resources, Thomson avoids the trap of "total strategy", preferring to "develop an approach to the network market, while being careful to concentrate on key products." Mr Darmon justifies this

strategy partly through the demand of customers who appreciate having several technical solutions offered by a manufacturer for a given network, and partly through the extensive capabilities of the group, whose competence ranges from components to consumer products. This is an advantage which only the Japanese can currently use. And to emphasize the importance of these two sectors to telecommunications, Mr Darmon considers as one of his major tasks "the maintenance of connections between the communications, components, and consumer products branches of Thomson."

#### Switching Data

The effects of this strategy are reflected in Thomson's recent restructuring. In the public telephone area for instance--which represents about 6 billion francs distributed almost equally between transmission and switching--LTT (Telephone and Telegraph Lines), space, and radio signal activities have been regrouped under the authority of Mr Imbert (but continue to remain independent profit centers). This organization makes it possible to offer customers various connections by cable, radio, or satellite. Similarly, for plant communications, a new regrouping of the private telephone, office automation, and Thomson-TITN activities took place after the transfer of SEMS (Electrical, Mechanical, and Signal Company) to CII. In this area, Mr Darmon points out the success of the Fortune operation, and his intention of repeating this type of cooperation.

Discussing the public switching area, Mr Darmon insists on three major points which today characterize the division's situation: "The products first arrive on the market (after the two MT-20's delivered in February, the first MT-25 will be sent to PTT in April); the industrial reorganization is then completed (our plants are fully adapted to the production of time switched exchanges at a steady rate of 120 units per week); and lastly, we achieve competitive cost prices which will allow us to strengthen our action on the international market (we already have orders on the books for 6 billion francs)."

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FRANCE

RADIOCOMMUNICATIONS CONFERENCE ON SATELLITE SEA RESCUE SYSTEM

Paris ELECTRONIQUE ACTUALITES in French 1 Apr 83 p 6

[Unsigned article]

[Text] The Worldwide Administrative Conference on Radiocommunications for Mobile Services (CAMR-MOB 1983), which just ended on 18 March in Geneva, adopted several resolutions on the development of a future worldwide system of sea distress and rescue (FSMDSM) using satellite mobile services.

This new system, which will succeed the present outdated sea distress system, will utilize land stations which will receive distress signals via satellites, as compared to the current method whereby ships monitor a dozen international distress frequencies and transmit from ship to ship, the signal sent by a vessel in distress. About 120,000 ships throughout the world are concerned by the new FSMDSM system, which will rely on equipment that is simpler to operate, such as radiobuoys that will emit an SOS as soon as they come in contact with the water. In particular, the ITU (International Telecommunications Union) conference adopted resolutions concerning the 2170-2194 KHz band (pursuit of studies for its utilization), and a radiotelephone frequency in the 8 MHz band to be used exclusively for distress and safety signals in FSMDSM (study to be conducted for the next conference on mobile services, scheduled for 1987).

In addition, for Region 1 (Europe-Africa), the conference adopted a resolution to convoke, as early as 1985 if possible, a regional administrative conference for radiocommunications, whose objective will be to establish plans for assigning mobile maritime service frequencies in the bands between 435 KHz and 526.5 KHz, and in portions of the band between 1606.5 KHz and 3400 KHz for Region 1, and to plan the utilization of the 415-435 KHz band by the air radionavigation service in Region 1.

11,023

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DIRECTOR OF STATE BROADCASTING SYSTEM ON DEVELOPMENT PLANS

Oslo AFTENPOSTEN in Norwegian 23 Apr 83 p 2

[Article by Director of Broadcasting Bjartmar Gjerde: "Perspective: Initiative with Possibilities"]

[Text] The technological possibilities of televising to larger areas will increase the pace of development tremendously. The rate of this development puts great demand on the rethinking of both the NRK [Norwegian Radio and Broadcasting System] and others. NRK has important tasks in this situation:

--To take care of Norwegian cultural interests in the widest sense, so that there is the best possible chance to survive outside influences.

--To develop NRK's capability to take Norwegian initiative and participate in competition.

The future is now. Local radio stations and local television stations have become known phenomena in many places in our country. In some places there has also been the opportunity to receive English television transmissions from the OTS [Orbiting Test Satellite]. These programs are distributed via cable to households.

In a few months there will be a new satellite--ECS 1. There are up to 18 television channels in this satellite. Depending on the concessions available, programs from this satellite will be received and distributed via a cable net all over Norway. The possibilities for Norway of using a satellite are tied to ECS 2, which will be in operation by fall next year. The Telecommunications Administration has an option to use a certain capacity of this satellite and must give a binding answer about its contract by midsummer this year.

This is the reason why NRK has prepared an outline for a program plan. NRK is asking for approval of this outline before the time expires to accept the satellite. This outline, which NRK's board has approved unanimously, has the following main points:

The income must come from the viewers themselves if they want to accept this new offer. This finance method is called paid television and is already popular in many places in the world. In other words, the new initiative will not prevent or delay other important NRK tasks.

Aside from covering investment costs and operation expenses, the income will be used for the development of the transmission net, development of the program offerings and investments in Norwegian cultural life in the form of joint productions, purchase and complete financing of film and video productions outside NRK.

Technically NRK has been working on a solution based on the principle that it is NRK's task to reach everybody whom it is technically and economically possible to reach. Based on that way of thinking, it would not be correct to concentrate too heavily on cable television. That kind of television distribution only reaches a small portion of the population today and will probably never reach everybody. Besides, this is a form of distribution that requires large investments. According to NOU [Norwegian Official Report] 1982:34 "Cable Television", the cost is estimated to be approximately 3 billion kroner to reach approximately 60 percent of the population with cable television.

Satellites that transmit directly have not been of immediate importance either. First, they will not be here for many years to come and even if it is possible, in principle, to put an antenna on the roof and receive transmissions from such satellites, it would mean an outlay of thousands of kroner for each household in order to buy and install an antenna and amplifier.

Instead, NRK has chosen a kind of expansion which aims at transmitting the programs from small ground stations on the so-called UHF net, a frequency area that can be received by all modern television receivers. With such a system we can quickly and at low cost reach approximately 65 percent of the population. The cost of this would amount to roughly 400 million kroner for this part of the development. Although any further development will be relatively more costly and less profitable, it would be both possible, for all practical purposes, and considerably less expensive than, for example, paying for cable and a satellite that transmits directly.

NRK's suggestion to start a program operation in Oslo, Stavanger, Bergen, Trondheim and Tromsø is primarily to obtain subscription support, which would yield a working profit for the other task developments as soon as possible. Further development would then take place as soon as economically possible.

Then to the most important question: What kind of programs should be presented in this new offer?

Since it is also certain that a great part of the foreign program offerings (also in the form of feature productions, television series, entertainment and sports) will reach the Norwegian television viewers within a short period of time anyway, NRK considers it its responsibility to make sure that this



programming can be undertaken in a manner which will make the programs best suited for the Norwegian public and ensure that program responsibility is always in Norwegian hands and that the income from the operation will benefit Norwegian cultural life and the viewers.

NRK is of the opinion that such a goal can be best reached by ensuring that:

--the long-term goal for the development of the program offer has a broad content--and as strong an element of Norwegian-produced programs as is economically possible and practical,

--the program scheme aims at offers which will reach as many as possible,

--the programs receive systematic presentation in advance publicity in Norway and that they are Norwegian or will be shown with Norwegian subtitles and

--the programs are in accordance with NRK's program regulations, quality requirements and purpose for presenting information, adventure and entertainment.

In order to obtain both these goals regarding the programs and in order to be able to expand the transmission system as soon as possible, it is necessary to begin on a modest scale with an offer of a justifiable nature which at the same time is attractive to future subscribers.

With an already adopted program start, NRK proposes to start by offering 25 viewer-hours per week. The programs are to be purchased from Norwegian and foreign sources. We anticipate that most of the material offered during the beginning phases will be of foreign origin and consist of feature films, television series and other suitable productions.

With respect to the possibilities of good and appropriate purchases of material, we do have some concerns. Today, NRK uses approximately 20 hours a week of foreign productions. This is but a small portion of the television and film productions in the world. We have enough to draw from.

In addition, substantial portions of the profits from this operation will be used for investments in Norwegian film and video productions outside NRK. This will happen through the rent of transmission rights, through joint production efforts and through equity financing. In connection with this, there are great expectations that we can get a step closer to the production of children's films in Norway. There is pitifully little to be found in this field, and an increase would be of an enormous importance for Norwegian children (and for the political profile of the programs both in television and in Norwegian movie theaters.)

What kind of guarantee does NRK have that our public is actually interested in using time and money for such an offer?

First, I want to say that the plan is to offer this program at the cost of approximately 60 kroner per month. An antenna will cost approximately 200 kroner, and the decoder, which will regulate both picture and sound so that the viewer will be able to enjoy the program, will cost approximately 1,000 kroner. Furthermore, we want to point out that studies show that Norwegians use a considerably larger portion of their income for leisure time activities than they did 10 years ago. A portion of this expenditure is within the media field.

In order to be still more certain, we want to conduct a qualitative market study as a part of our preparations. It is at the central point between the public's wishes and NRK's goals and regulations that we will find the best basis for an attractive quality offer.

NRK hopes to get the go-ahead to sign a contract for the ECS 2 satellite and to prepare a detailed plan for the new offer so that we will be able to be "on the air" with a Norwegian transmission before offers from the outside world have made it difficult or impossible.

9583

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# NORDIC MOBILE TELEPHONE SYSTEM PROVES SUCCESS

Oslo AFTENPOSTEN in Norwegian 20 Apr 83 p 12

[Article by Terje Avner: "Nordic Mobile Telephone: 27 Million Calls on the Call-Metering System a Huge Success"]

[Text] The Nordic Mobile Telephone (NMT) has proved to be a huge success for the Telecommunications Administration. Last year, 14,000 subscribers chatted on 27 million calls in the metering system. This meant an income of over 30 million kroner for the Telecommunications Administration. "Almost twice as much as we had estimated," says chief engineer Kare Gustad of the Teledirectorate to the AFTENPOSTEN.

NMT is the space-age version of the ordinary mobile telephone. In the car or any other place where it is possible to take one's own NMT, the subscriber to the system is now able to dial direct all over the world. In other words, it is not necessary to go through the telephone exchange as was necessary with the old system, which, however, is still in operation.

The new mobile telephone was expected to become popular. The Teledirectorate knows that Norwegians are avid telephone users, and proportionally there is no other country where the mobile telephones are as popular as in Norway. Based on that fact, a plan was drawn up predicting a capability of handling approximately 10,000 new NMT subscriptions every year starting in the fall of 1981. The predictions proved correct. Despite the fact that a single modern NMT unit costs between 20,000 and 30,000 kroner, there were 14,067 subscriptions by 1 April of this year.

With respect to the use of NMT, the Teledirectorate has, however, miscalculated --on the positive side. The subscribers use their units at a much higher rate than anyone could have dreamed.

"The final figure for 1982 is 27 million calls on the metering system. This is almost twice as much as we had expected," said Gustad of the Teledirectorate. The income has risen parallel to that. Last year, the income was over 30,000 million kroner.

"This means that we have been forced to speed up expansion of the telephone centrals. Our goal is to be one step ahead. After all, the avid use of the

system came as a surprise, so there might be a time when it would be difficult for the subscriber to get through with their units."

What about the old mobile telephone?

"It will become a legacy or will be used parallel with the other. While we are looking at 800-900 new NMT subscriptions every month, the number of the manual units is only reduced by a couple of hundred," says Gustad.

The Teledirectorate has recognized 11 factory makes of NMT systems. These are in hard competition. If the predictions of the Teledirectorate prove correct, units for approximately 1 billion kroner will be sold during the first 4 years.

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SWEDEN

## COUNTRY'S FIRST 'VOICE MAIL BOX' PHONE SYSTEM TO START

Stockholm SVENSKA DAGBLADET in Swedish 23 Mar 83 p 34

[Article by Margareta Artsman]

[Text] Goteborg--Will the "voice mail box" become the future means of communication for people who have so many irons in the fire that they are extremely difficult to reach by telephone? The first "mail box" now is being tested by the Telecommunications Service in Goteborg.

The "mail box" makes it possible, at any time, to leave and receive messages. Whoever has access to the voice mail box can control an advanced computer in a totally unique manner.

"The voice mail box is not a telephone answerer," Goran Arfvidson of the Telecommunications Service in Goteborg said. "It provides people who travel a lot with unbelievable opportunities, thus saving them much working time. We know that half of all telephone calls made today do not reach the right person."

### Can Frighten

Goran Arfvidson is aware that the voice mail box could frighten people who do not like computers. For this reason, he compares the system to a post office where people pick up mail from their box with their own key. With the telephone, however, the customer has an access code to the voice mail box.

First he dials the number of the voice mail box, after which his personal code is entered into the telephone--a diavox or, in the case of a dial phone, a small tone transmitter is used. This opens the box.

Let us take an example. A busy businessman is waiting one evening at Arlanda Airport. He will not arrive at his office in Goteborg before the switchboard closes.

Ordinarily, his desk would have been covered with messages from people who had tried unsuccessfully to reach him. He, too, has several important messages to leave for various colleagues.

Instead, he dials the number of his voice mail box. A friendly voice answers and asks him to enter his personal code. He is informed that he has seven messages and he is given the names of those who have called. The voice asks if he wants these names read.

He presses a button to answer "yes" and hears the voices. If he is in a hurry, he can "leaf through" the messages, but at any time he can answer a message and then order the computer to deliver this message to the proper caller. The computer has stored the address.

The busy user can immediately erase less important messages and store others for future needs. He can make copies of outgoing messages or order them to be sent at a later time.

#### Also Sends Messages

If he wants to send a message himself, he presses a button and, when asked to whom the message should be sent, he enters the number of the receiver's mail box. The instructions always are acknowledged by the computer. It also is possible to send the same message to several people at once.

When our hurried businessman returns to Goteborg, he may be concerned that an important message was not received. He then can call his mail box and find out if the addressee has "emptied" his mail box. He can even find out what time the message was received.

It also is possible to talk to a mail box without having a box oneself, but it is necessary to have the group number and the mail box number. Such a caller can only leave and hear his own messages. He can never obtain other information from the box.

Each mail box has four compartments. The first contains all messages that have arrived since the mail box last was emptied. If the customer wishes to save these letters, they can be transferred to another compartment, which the computer automatically empties after 1 week, unless it is instructed to retain them longer. There also is a compartment for matters that must be followed up and one for copies.

"Users of this system should learn to empty their mail boxes regularly and see how much work they save," Goran Arfvidson said. "It should be unrivalled for companies in which extremely busy employees must remain in close contact."

#### From United States

The system and the computer come from the United States, where there are a number of voice mail boxes today.

So far, the system is so new that the Telecommunications Service has not had time to translate everything into Swedish.

SWEDEN

# GOVERNMENT HALTING MOVE TOWARD LOCAL TELEVISION BROADCASTING

Stockholm SVENSKA DAGBLADET in Swedish 15 Apr 83 p 6

[Article by Hans O Alfredsson: "Local TV. No More Experiments."]

[Text] There will be no further experiments with local TV as the present experiment period will be over at the end of the year. This was the message given by Minister of Culture Bengt Goransson (Social Democrat) in the parliament on Thursday.

The issue is investigated by the mass media committee, and the difficulties are so big that it is meaningless to extend the experiment time, he said.

"Eventual experiment activities must be put off until the investigators have given their account of this matter", said the minister of culture in his response to a question raised by the former Minister of Culture Jan-Erik Wikstrom (People' Party).

Worried Wikstrom

Wikstrom became, as he said, "pretty worried" about the response. He thought that there will be a strange situation when the present experiment activities will be suddenly stopped at the end of 1983.

"Can it not be admitted that the activity may continue at least until there will be an investigation proposition", he wondered.

No, Bengt Goransson did not agree. He referred, among other things, to a report from Stockholm's local radio association regarding the experiment with cable-TV in Huddinge.

"According to the report, the coverage area is so limited that the associations do not think that it is worth spending money on equipment and training."

Services on TV

Jan-Erik Wikstrom found it unreasonable not to let, for instance, Free Church parishes broadcast services when it is known what is waiting around the corner. He hinted at the future possibilities to transmit via satellite.

Several Swedish companies are interested, but the Telecommunications Service has reserved the right to choose those that will participate in field tests during 1983. The computer in Goteborg serves 1,000 mail boxes. No one yet knows how large the Swedish market will be and what the service will cost.

It is almost impossible to look into the future with regard to this advanced computer technology, according to Goran Arfvidson.

"But I believe it soon will be possible to have written messages delivered by telex or computer read over the phone by the system. In the future, it will not be necessary to press any buttons. The user simply will say what he wants."



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"I know there are difficulties, but many people as well as organizations are ready to spend lots of money on this." he pointed out.

A number of associations have already requested to be allowed, just for a trial, to broadcast local TV on the air. These associations are partly in the Stockholm area, partly in Linköping. According to the directive, the mass media committee will plan its work so that a proposition can be presented to the parliament within two years, in the spring of 1985.

12190

CSO: 5500/2678

SWEDEN

BRIEFS

L M ERICSSON PLANS EXPANSION--L M Ericsson is expecting a very heavy expansion during the coming 5-year period. Invoicing will double by 1987, writes CEO Bjorn Svedberg in the annual report. The possibilities to increase profits are considered good. If the outlook fulfills, there is capacity to increase distribution faster than the international inflation rate. [Text] [Stockholm DAGENS NYHETER in Swedish 13 Apr 83 p 11] 12190

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END